USER MANUAL

Free2move - Flash Utility User Guide

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Table of contents

1 INTRODUCTION 3
1.1 OVERVIEW 3
1.2 REQUIREMENTS 3
1.3 SPI-INTERFACE 3
2 INSTALLING FLASH UTILITY 4
3 USING FLASH UTILITY 9
3.1 STARTING FLASH UTILITY 9
3.2 SETTINGS MENU 11
3.3 FREE2MOVES ARTICLE NUMBER STRUCTURE. 12
3.4 DOWNLOAD FIRMWARES 13
3.5 LOAD MODULE 14
3.6 FLASH THE MODULE 15
3.7 CUSTOM SETTINGS 17
4 TROUBLESHOOTING 18

1 Introduction

This document is a guideline for all users of Free2move's Flash Utility software and will give an overview of how to install and use Free2move's Flash Utility software.

1.1 Overview

Flash Utility is an easy to use application that allows Free2move to distribute firmwares and updates to customers for the F2M03 Bluetooth modules. It provides Free2move's customers with the ability to evaluate and test different firmwares on the F2M03 Bluetooth modules.

1.2 Requirements

Flash Utility has the following requirements:

- Windows 2000 systems or later.
- Java Runtime Environment 1.5 (JRE 5.0) or later.
- A LTP-to-SPI-interface.
- About 16 MB of hard disk space.
- A direct Internet connection and not through a proxy server.
- The user must have administrator privileges.

1.3 SPI-Interface

To be able to use Flash Utility together with Free2move's F2M03 Bluetooth modules a SPI-interface is needed.

- The SPI-interface **must** be a LTP-to-SPI converter following CSR's design rules such as Free2moves evaluation-kits.
- The LTP-port used **must** be a motherboard mounted LTP-port, a USB-to-LTP converter or PCI-to-LTP plug-in card will not work.

The SPI-interface can only be used for flashing and reading up information from the module, nothing more.

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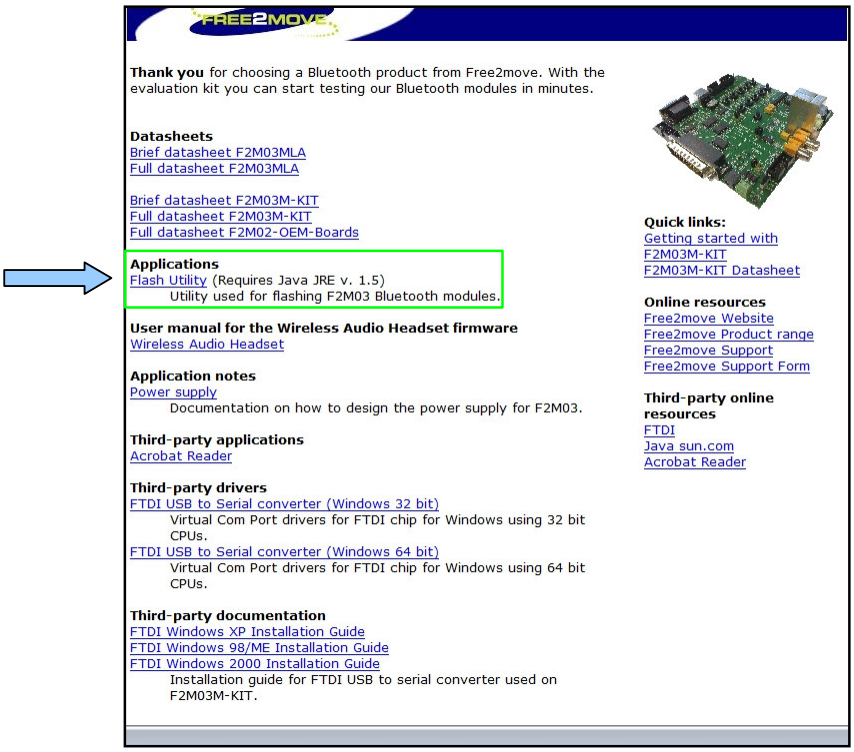
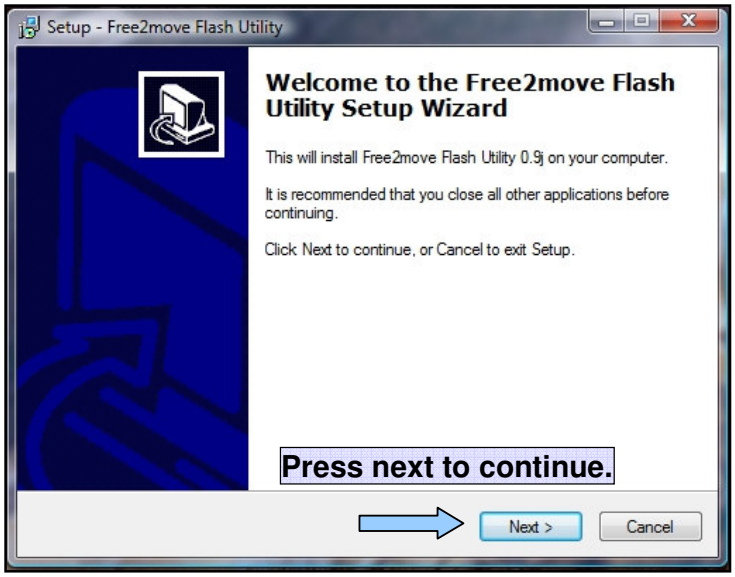
2 Installing Flash Utility

Together with the evaluation-kit comes a CD. Insert the CD into the PC intended to be used with the evaluation-kit. An Internet browser should open; press the “Flash Utility” link under Applications to start the installation of Flash Utility.

The user must have administrator privileges to install Flash Utility correctly.


FREE2MOVE
Thank you for choosing a Bluetooth product from Free2move. With the evaluation kit you can start testing our Bluetooth modules in minutes.
Datasheets
Brief datasheet F2M03MLA
Full datasheet F2M03MLA
Brief datasheet F2M03M-KIT
Full datasheet F2M03M-KIT
Full datasheet F2M02-OEM-Boards
Applications
Flash Utility (Requires Java JRE v. 1.5)
Utility used for flashing F2M03 Bluetooth modules.
User manual for the Wireless Audio Headset firmware
Wireless Audio Headset
Application notes
Power supply
Documentation on how to design the power supply for F2M03.
Third-party applications
Acrobat Reader
Third-party drivers
FTDI USB to Serial converter (Windows 32 bit)
Virtual Com Port drivers for FTDI chip for Windows using 32 bit CPUs.
FTDI USB to Serial converter (Windows 64 bit)
Virtual Com Port drivers for FTDI chip for Windows using 64 bit CPUs.
Third-party documentation
FTDI Windows XP Installation Guide
FTDI Windows 98/ME Installation Guide
FTDI Windows 2000 Installation Guide
Installation guide for FTDI USB to serial converter used on F2M03M-KIT.
Quick links:
Getting started with F2M03M-KIT
F2M03M-KIT Datasheet
Online resources
Free2move Website
Free2move Product range
Free2move Support
Free2move Support Form
Third-party online resources
FTDI
Java sun.com
Acrobat Reader


Setup - Free2move Flash Utility
Welcome to the Free2move Flash Utility Setup Wizard
This will install Free2move Flash Utility 0.9j on your computer.
It is recommended that you close all other applications before continuing.
Click Next to continue, or Cancel to exit Setup.
Press next to continue.
Next >
Cancel

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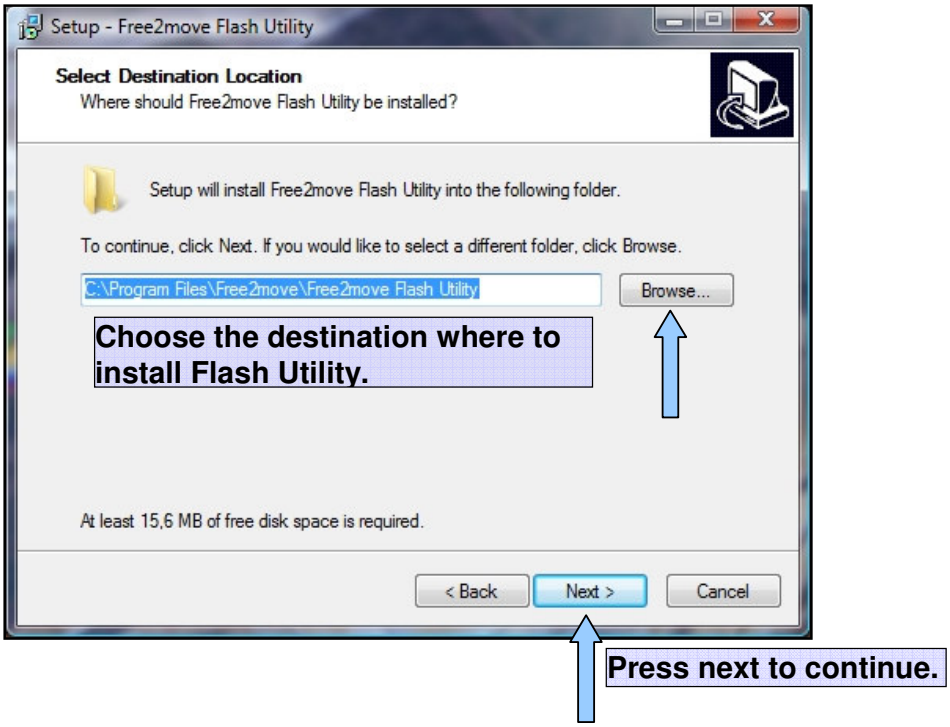
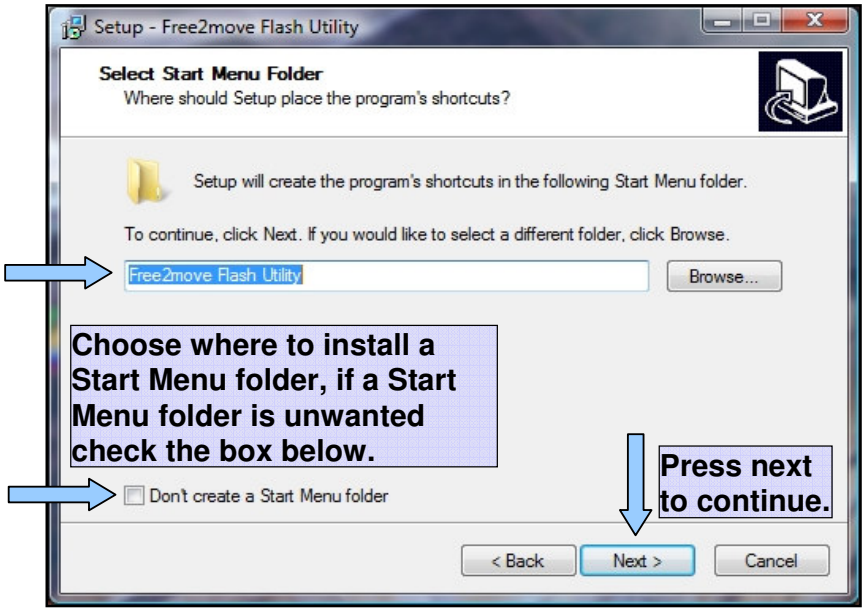

Setup - Free2move Flash Utility
Select Destination Location
Where should Free2move Flash Utility be installed?
Setup will install Free2move Flash Utility into the following folder.
To continue, click Next. If you would like to select a different folder, click Browse.
C:\Program Files\Free2move\Free2move Flash Utility
Browse...
Choose the destination where to install Flash Utility.
At least 15,6 MB of free disk space is required.
< Back
Next >
Cancel
Press next to continue.


Setup - Free2move Flash Utility
Select Start Menu Folder
Where should Setup place the program's shortcuts?
Setup will create the program's shortcuts in the following Start Menu folder.
To continue, click Next. If you would like to select a different folder, click Browse.
Free2move Flash Utility
Browse...
Choose where to install a Start Menu folder, if a Start Menu folder is unwanted check the box below.
Don't create a Start Menu folder
Press next to continue.
< Back
Next >
Cancel

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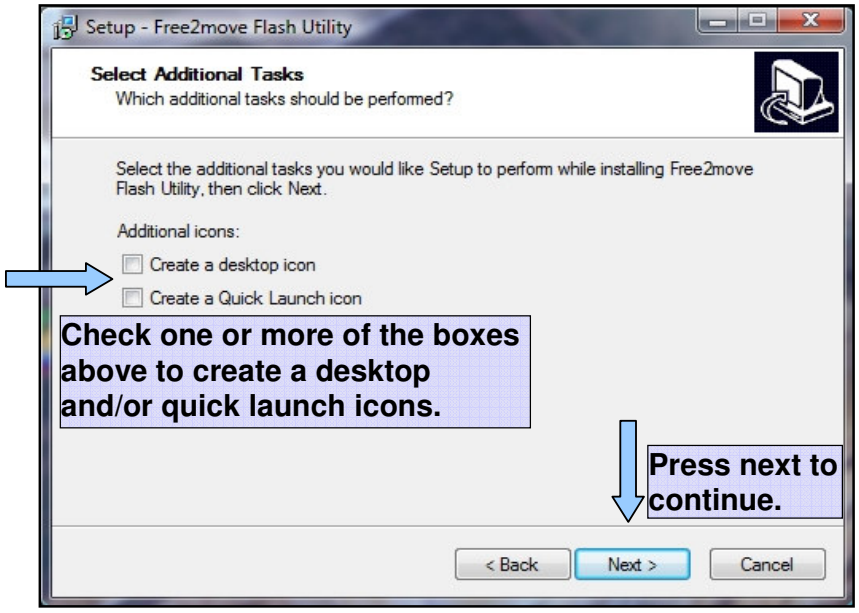
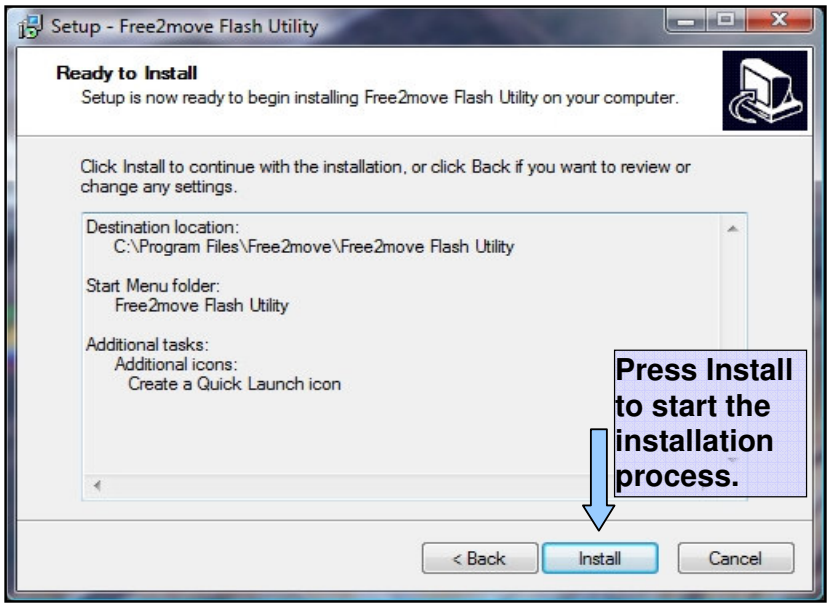

Setup - Free2move Flash Utility
Select Additional Tasks
Which additional tasks should be performed?
Select the additional tasks you would like Setup to perform while installing Free2move Flash Utility, then click Next.
Additional icons:
Create a desktop icon
Create a Quick Launch icon
Check one or more of the boxes above to create a desktop and/or quick launch icons.
Press next to continue.
< Back
Next >
Cancel


Setup - Free2move Flash Utility
Ready to Install
Setup is now ready to begin installing Free2move Flash Utility on your computer.
Click Install to continue with the installation, or click Back if you want to review or change any settings.
Destination location:
C:\Program Files\Free2move\Free2move Flash Utility
Start Menu folder:
Free2move Flash Utility
Additional tasks:
Additional icons:
Create a Quick Launch icon
Press Install to start the installation process.
< Back
Install
Cancel

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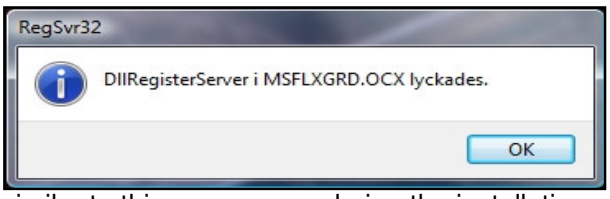
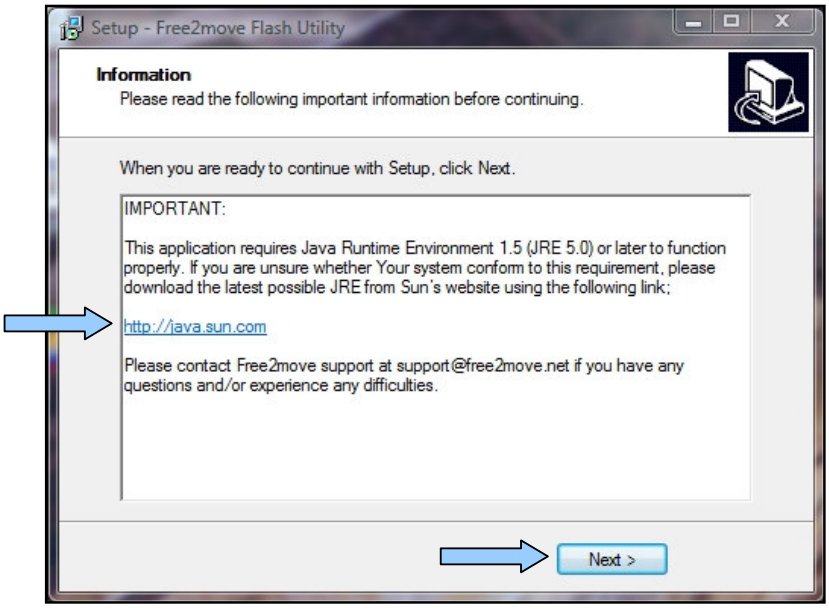


A window similar to this may appear during the installation, press OK.


Setup - Free2move Flash Utility
Information
Please read the following important information before continuing.
When you are ready to continue with Setup, click Next.
IMPORTANT:
This application requires Java Runtime Environment 1.5 (JRE 5.0) or later to function properly. If you are unsure whether Your system conform to this requirement, please download the latest possible JRE from Sun's website using the following link;
http://java.sun.com
Please contact Free2move support at support@free2move.net if you have any questions and/or experience any difficulties.
Next >

Note that Flash Utility requires Java Runtime Environment 1.5 (JRE 5.0) or later to function correctly. Press next to continue.

Setup - Free2move Flash Utility
Completing the Free2move Flash Utility Setup Wizard
Setup has finished installing Free2move Flash Utility on your computer. The application may be launched by selecting the installed icons.
Click Finish to exit Setup.
Flash Utility has now been installed; press Finish to complete the installation.
< Back
Finish

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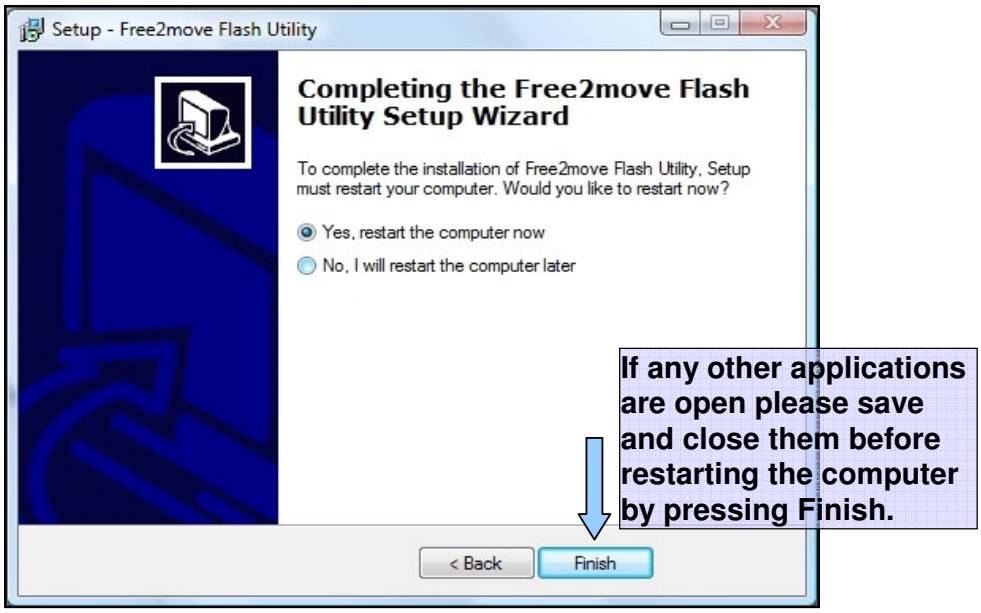
Setup - Free2move Flash Utility
Completing the Free2move Flash Utility Setup Wizard
To complete the installation of Free2move Flash Utility, Setup must restart your computer. Would you like to restart now?
Yes, restart the computer now
No, I will restart the computer later
< Back
Finish
If any other applications are open please save and close them before restarting the computer by pressing Finish.

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3 Using Flash Utility

This chapter describes how to navigate and use the Flash Utility software.

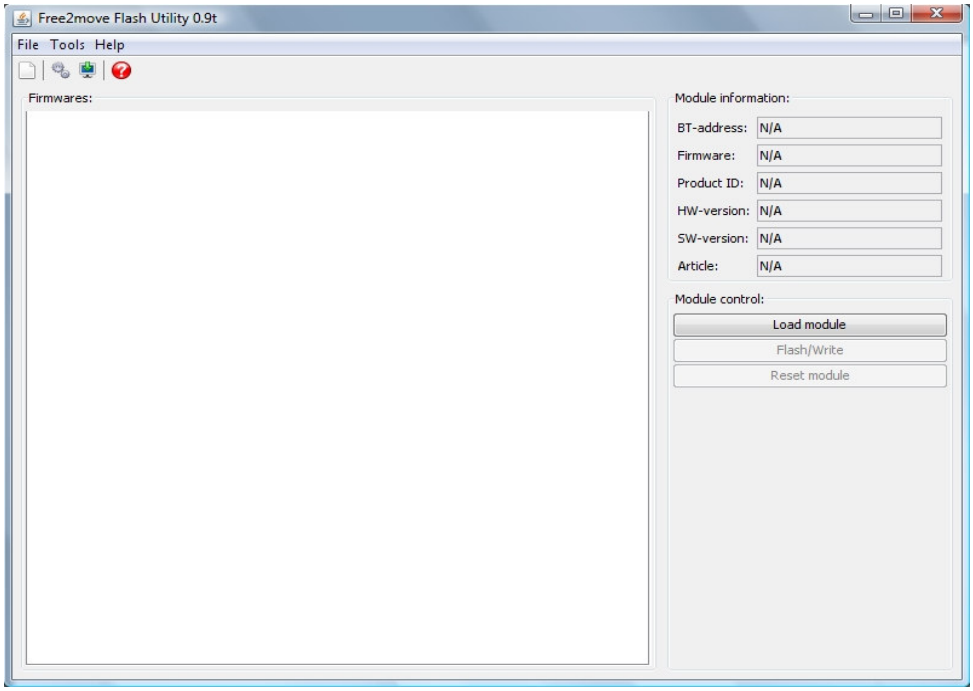
3.1 Starting Flash Utility

If an Internet connection is available when starting Flash Utility an update window may appear.

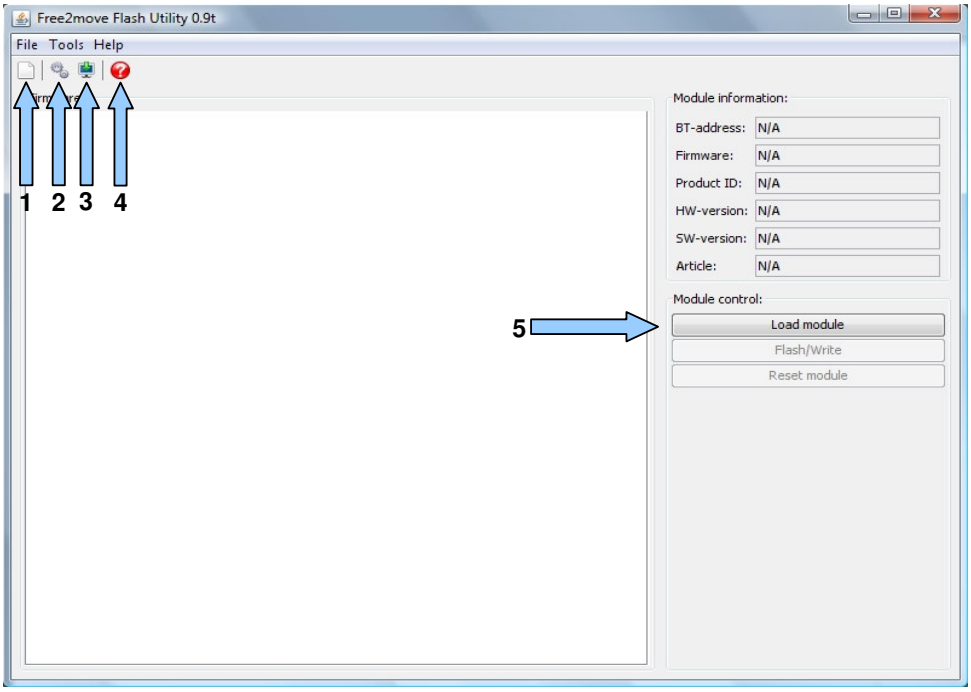
Update Avaliable!
Flash Utility
FREE2MOVE
Details:
Free2move's generic flash utility used to simplify firmware changes, updates, as well as various firmware settings on Free2move's Bluetooth modules.
Avaliable version:
Version: 0.9t
Released: Mon, 14 Apr 2008 13:20:00 +0200
Size: 4.70MB
Fixed read-module crashes that occured when loading modules with specific PCM/UART settings enabled.
Update!
Cancel

Press ‘Update!’ to update Flash Utility to the latest version.

After Flash Utility has started the following window will open:



© 2008 Free2move AB



Flash Utility is an easy to use application and only has a few buttons that needs to be used.

An overview of the available buttons:

1. **Reset**
   - The reset button can be used to do a reset on the module.
2. **Settings**
   - Opens up a menu where basic settings in Flash Utility can be set.
3. **Download firmware**
   - Opens up a menu from where the user can download firmwares for the different F2M03 Bluetooth modules.
4. **About**
   - Shows information about the currently installed version of Flash Utility.
5. **Load Module**
   - The Load Module button is used to read up information on the currently connected F2M03 Bluetooth module.

These buttons can also be found in the toolbar. Under Tools in the toolbar there is an option, 'Remove installed firmwares'. This can be used to 'clean up' and will remove all of the installed firmwares in Flash Utility.

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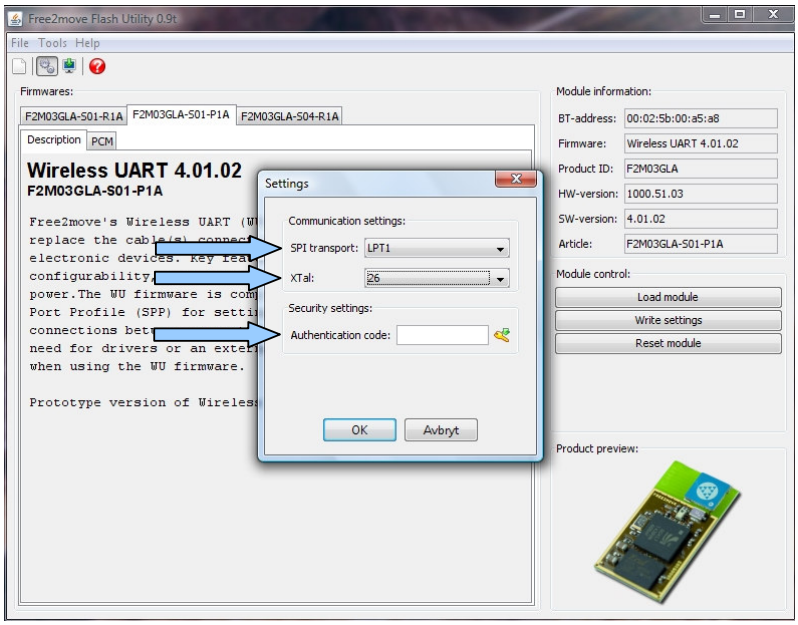
3.2 Settings menu

In the settings menu there are three points of interest, SPI transport, Xtal and Authentication code.



SPI-transport: In the future it will be possible to transport the SPI interface over more then the LTP port, for now the LTP-port is the only option until a better solution can be implemented.

Xtal: The F2M03 Bluetooth modules can have different crystals mounted. This value should **always** be set to 26 and only changed if told so by a Free2move engineer.

Authentication code: Free2move can under some circumstances do custom firmwares for the F2M03 Bluetooth modules for other companies. These companies will be given a unique authentication code that can be inserted into the authentication code field. This will open up the possibility for companies to flash and test there custom firmware via Flash Utility.

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3.3 Free2moves article number structure.

To know which firmware to download one must first know a bit about Free2moves article number structure.

The article structure is built up by three parts:

- Hardware
- Firmware
- Revision

The first part of the article number is the hardware description part. Example of this can be:

- F2M03GLA **G**eneral purpose **L**ow power module with **A**ntenna.
- F2M03GXA **G**eneral purpose e**x**tended range module with **A**ntenna.
- F2M03MLA **M**ultimedia **L**ow power module with **A**ntenna.
- F2M03ALA **A**udio **L**ow power module with **A**ntenna.

The second part of the article number is the firmware description part. Example of this can be:

- S01 Wireless UART.
- S03 Wireless Audio Headset.
- S04 HCI for USB.
- S05 Wireless Audio Streamer.

The third part of the article number is the revision part. Example of this can be:

- R1A Release, hardware revision 1, software revision A.
- P1D Prototype hardware revision 1, software revision D.

All released firmwares are in production and can be ordered via a distributor while the prototype firmwares can not be ordered; only tested by re-flashing modules via Flash Utility.

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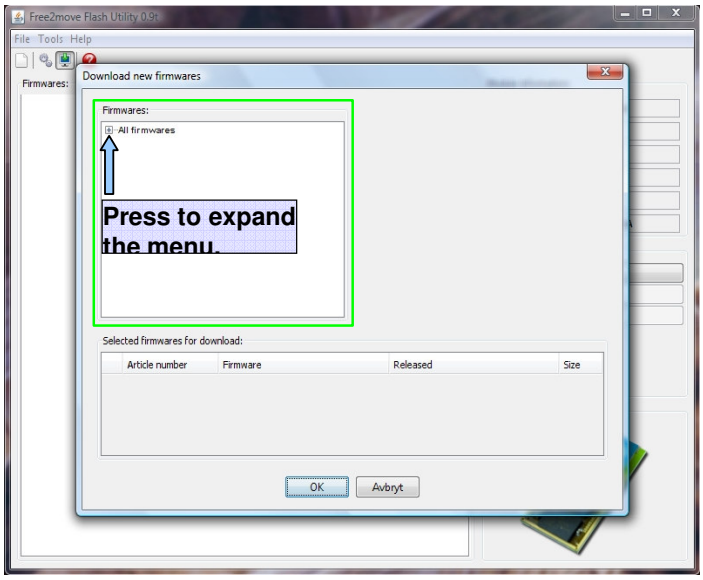
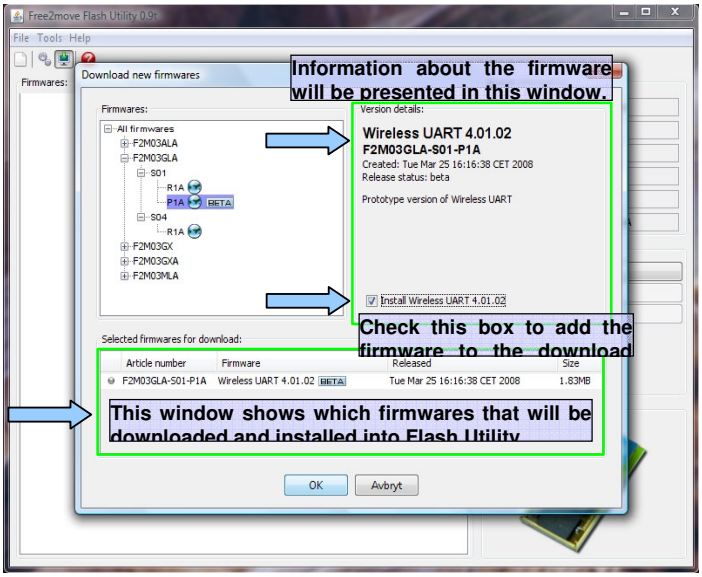
3.4 Download Firmwares

To be able to download firmwares into Flash Utility there must be a direct Internet connection available. It is not necessary to have an Internet connection just to flash a module. Press the 'Download Firmwares' button to open up the Download new firmwares window.



Press the '**+**' to expand the navigation menu, navigate to the F2M03 Bluetooth module of interest. In the example below this has been done for the F2M03GLA.



To download a firmware, check the install box in the middle of the window. More than one firmware from multiple modules can be selected to be downloaded and installed into Flash Utility at one time. When selecting a firmware, information about the selected firmware will be presented under 'Version details' located in the upper right part of the window. The selected firmwares for download are presented in the bottom part of the window.

Press 'OK' to start the download and installation process of the selected firmwares. This can take some time depending on the quality of the Internet connection.

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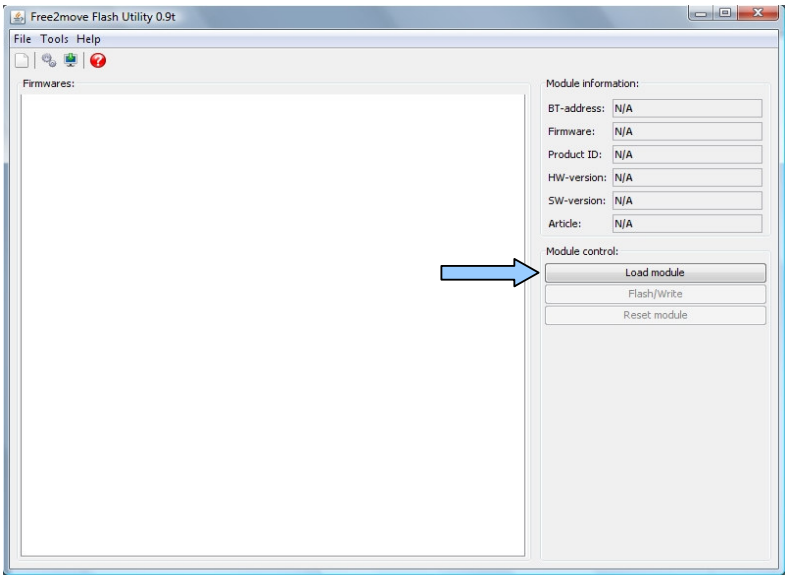
After the firmwares have been installed the icon in the navigation window will change from a globe to a computer screen and the install box can not be selected anymore.

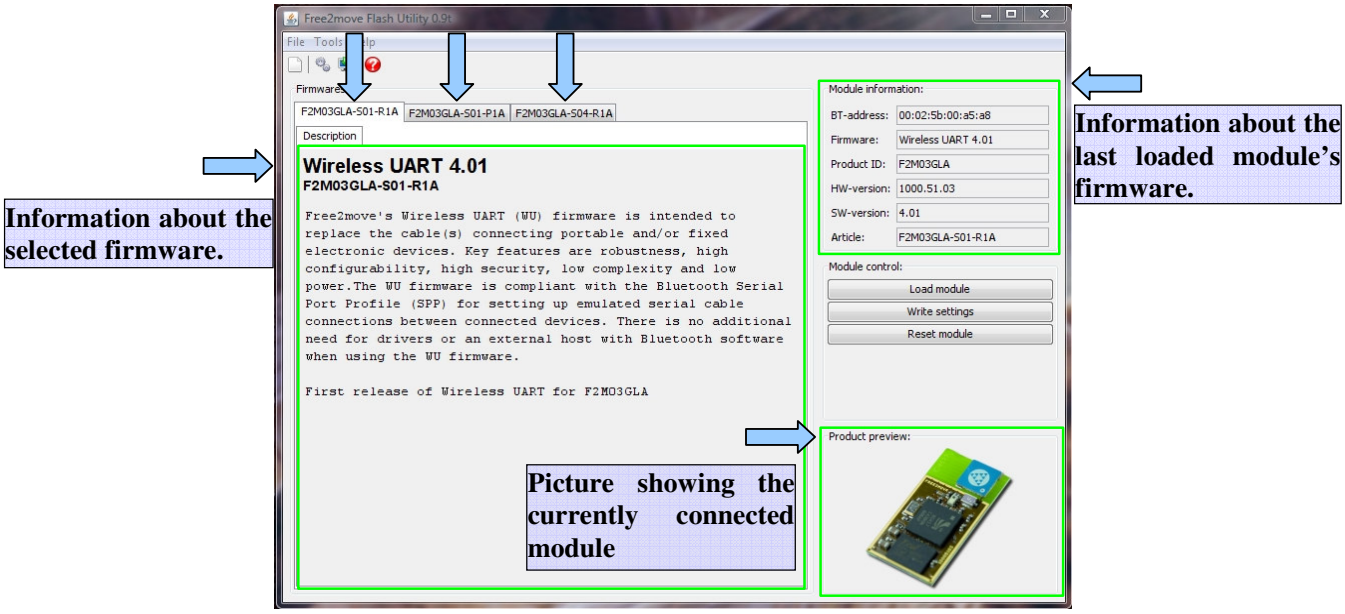
3.5 Load Module

To be able to flash a module it must first be loaded into Flash Utility. This is done by pressing the 'Load module' button. Be sure that the Bluetooth module is correctly connected before loading the module.



After loading a module, information about the currently connected module can be seen in the Module information section, a picture of the loaded module can be seen in the 'Product preview' section and the firmware information can be seen in the 'Description section'.

In this example three firmwares have been downloaded for the F2M03GLA module.


Information about the selected firmware.
Information about the last loaded module's firmware.
Picture showing the currently connected module
Free2move Flash Utility 0.9t
F2M03GLA-S01-R1A
F2M03GLA-S01-P1A
F2M03GLA-S04-R1A
Description
Wireless UART 4.01
F2M03GLA-S01-R1A
Free2move's Wireless UART (WU) firmware is intended to replace the cable(s) connecting portable and/or fixed electronic devices. Key features are robustness, high configurability, high security, low complexity and low power.The WU firmware is compliant with the Bluetooth Serial Port Profile (SPP) for setting up emulated serial cable connections between connected devices. There is no additional need for drivers or an external host with Bluetooth software when using the WU firmware.
First release of Wireless UART for F2M03GLA
Module information:
BT-address: 00:02:5b:00:a5:a8
Firmware: Wireless UART 4.01
Product ID: F2M03GLA
HW-version: 1000.51.03
SW-version: 4.01
Article: F2M03GLA-S01-R1A
Module control:
Load module
Write settings
Reset module
Product preview:

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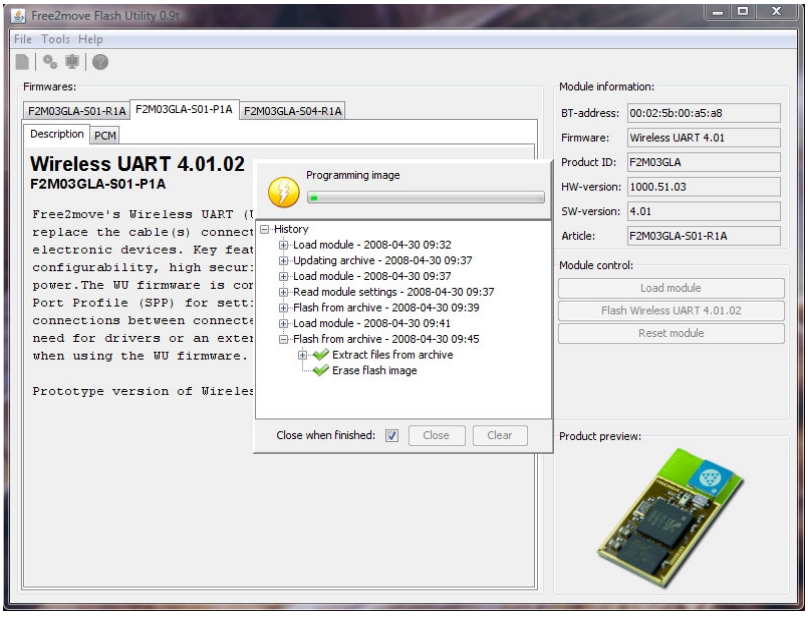
3.6 Flash the module

To flash a F2M03 Bluetooth module click on the tab of the firmware intended to be flashed down into the module. The Load module button should now change to a Flash X button where X is the firmware name.

Press the Flash button to start flashing the module.

Free2move Flash Utility 0.9t
File Tools Help
Firmwares:
F2M03GLA-S01-R1A
F2M03GLA-S01-P1A
F2M03GLA-S04-R1A
Description
PCM
Wireless UART 4.01.02
F2M03GLA-S01-P1A
Free2move's Wireless UART (WU) firmware is intended to replace the cable(s) connecting portable and/or fixed electronic devices. Key features are robustness, high configurability, high security, low complexity and low power.The WU firmware is compliant with the Bluetooth Serial Port Profile (SPP) for setting up emulated serial cable connections between connected devices. There is no additional need for drivers or an external host with Bluetooth software when using the WU firmware.
Prototype version of Wireless UART
Module information:
BT-address: 00:02:5b:00:a5:a8
Firmware: Wireless UART 4.01
Product ID: F2M03GLA
HW-version: 1000.51.03
SW-version: 4.01
Article: F2M03GLA-S01-R1A
Module control:
Load module
Flash Wireless UART 4.01.02
Reset module
Product preview:
Press to flash the module with the selected firmware.

After pressing the Flash button, a confirmation window will appear, press OK to flash the module. A window will appear showing how the module being erased and flashed with the new firmware.



Note: Do not turn off the power or remove the module during the flash process, this can cause the module to become **unusable**!!!

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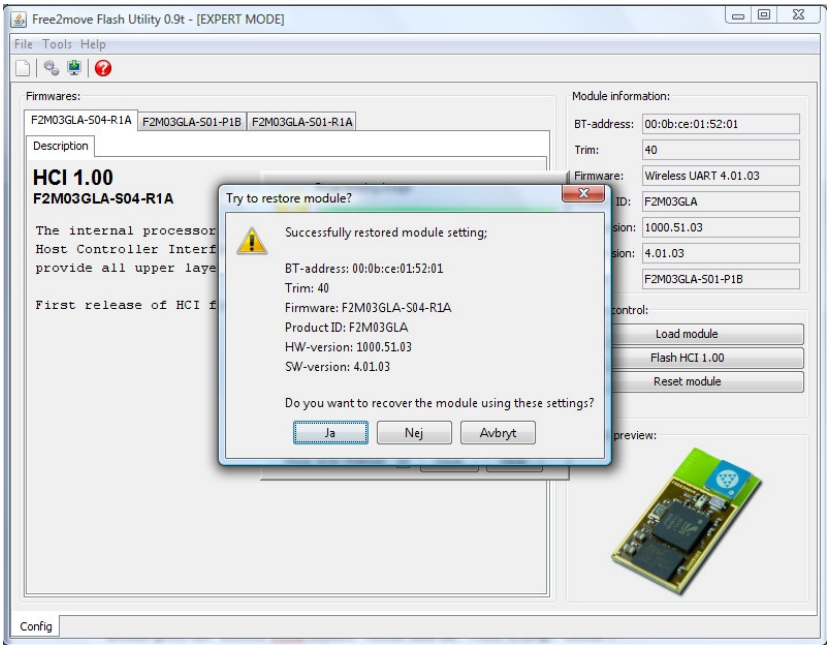
When the flash process is done the flashed firmware's information page should appear and the Firmware, SW-version and Article information in the Module information section should now have been updated.

Free2move Flash Utility 0.9t
File Tools Help
Firmwares:
F2M03GLA-S01-R1A
F2M03GLA-S01-P1A
F2M03GLA-S04-R1A
Description
PCM
Wireless UART 4.01.02
F2M03GLA-S01-P1A
Free2move's Wireless UART (WU) firmware is intended to replace the cable(s) connecting portable and/or fixed electronic devices. Key features are robustness, high configurability, high security, low complexity and low power.The WU firmware is compliant with the Bluetooth Serial Port Profile (SPP) for setting up emulated serial cable connections between connected devices. There is no additional need for drivers or an external host with Bluetooth software when using the WU firmware.
Prototype version of Wireless UART
Module information:
BT-address: 00:02:5b:00:a5:a8
Firmware: Wireless UART 4.01.02
Product ID: F2M03GLA
HW-version: 1000.51.03
SW-version: 4.01.02
Article: F2M03GLA-S01-P1A
Module control:
Load module
Write settings
Reset module
Product preview:

If something goes wrong during the flashing process a window will appear.



By pressing **Yes** a new attempt of flashing the module will be made. If **No** or **Abort** is pressed all data will be lost and the module will become completely **unusable**.

If unable to flash a module, write down the Bluetooth address and trim value and contact Free2move support for help on how to recover the device.

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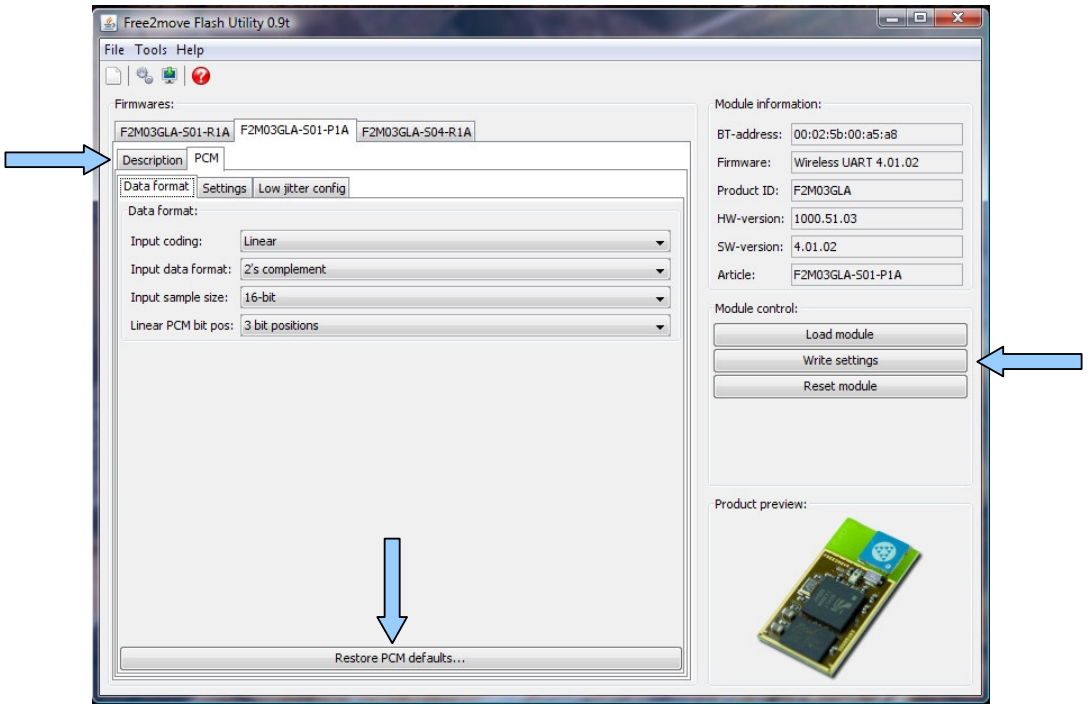
3.7 Custom Settings

In some of the firmware custom settings have been opened up.

In the example below the PCM interface has been unlocked. This is shown by a tab next to the “Description” tab.

Making adjustments here is done at the users own risk as illegal settings can be set!



To write the settings press the “Write settings” button. To restore the default settings in the module press the “Restore XXX defaults” button followed by “Write settings” button.

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4 Troubleshooting

Problems starting Flash Utility:

The computer must be restarted after installing Flash Utility, test rebooting the PC.

Flash Utility requires Java Runtime Environment 1.5 (JRE 5.0) or later to work properly. Check if JRE 5.0 is installed on the computer. If not, go to http://java.sun.com/ to download and install the latest version.

The SPI drivers must be registered. Double clicking the spiregister.bat file which can be found where Flash Utility is installed.

The user must have administrator rights if Flash Utility is installed in a public folder such as c:\program files\ directory.

Flash Utility can not be used behind a proxy server.

Trouble updating Flash Utility:

Check that the user account has the necessary rights and that the firewall does not stop the communication.

Flash Utility can not be used behind a proxy server.

Can not find module:

Is the module correctly connected, check the SPI-interface and that the module has power (the evaluation-kit has power)?

The flash procedure crashes:

Check the power and SPI-interface, if no fault can be found write down the Bluetooth address and Trim value so the module can be saved in a later stage.

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